

### **ABSTRACT**

A wireless tire pressure sensing system for an aircraft comprises: dual resonant circuits mounted to a wheel of the aircraft, each resonant circuit comprising: a variable capacitance sensor and a wire loop of a predetermined inductance coupled thereto, one capacitance sensor for monitoring the pressure of a tire mounted to the wheel, and the other capacitance sensor operative as a reference to the one capacitance sensor; an interrogating circuit magnetically coupleable to the dual resonant circuits and operative to induce magnetically a variable frequency current in the dual resonant circuits, the one resonant circuit responding to the induced current with an E-field signal at a first resonant frequency commensurate with the capacitance of the one sensor, and the other resonant circuit responding to the induced current with an E-field signal at a second resonant frequency commensurate with the capacitance of the other sensor; a receiving circuit E-field coupleable to the dual resonant circuits and operative to receive the E-field signals at the first and second resonant frequencies and to generate first and second signals representative thereof; and a processing circuit coupled to the receiving circuit for processing the first and second signals to generate a compensated pressure reading of the tire. The pressure sensing system may be modified to provide and/or include wheel speed sensing.